

Upchurch Scientific® Fittings & Connectors for Ultra-High Performance Liquid Chromatography

Upchurch Scientific ultra-high performance (UHP) fittings and connectors offer an increased ability to withstand the demanding requirements of today's Ultra-High Performance Liquid Chromatography (UHPLC) instruments, and are used in applications where improvements in efficiency, speed, and resolution are needed. This line of products effectively handles system stresses caused by recent innovations in UHPLC, such as smaller column packing materials, higher temperatures, and faster analysis.

UHPLC is characterized by applications working at higher pressures than 6,000 psi (414 bar) or operating above ambient temperatures. Because the hardware used in UHPLC applications can often handle system pressures of 9,000 psi (620 bar) or more, chromatographers can use columns packed with more advanced stationary phases where the particles are much smaller than the traditional 5 µm diameter silica. The use of smaller particle stationary phases improves the achieved resolution and decreases overall run time. Because some systems and after-market accessories allow precise temperature control even at elevated levels, chromatographers can experience such benefits as decreased fluid viscosity, more consistent sample analyses, and faster run times.



Benefits of Using UHPLC

- ▶ Improved efficiency
- ▶ Reduced analysis time
- ▶ Increased resolution
- ▶ Higher sensitivity
- ▶ Easy to transfer HPLC methods

NEW for UHPLC!

Ultra-High Pressure Fittings and Connectors

- ▶ Stainless steel fittings and connectors rated up to 30,000 psi (2,068 bar) and 400 °C

Upchurch Scientific ultra-high pressure fittings and connectors hold to much higher pressures than similar products designed for traditional HPLC. The fittings are configured for use in standard 10-32 coned ports, with ferrule options for both 1/16" and 1/32" OD tubing. The specially designed union, tee, and cross are available for standard connections involving 1/16" OD tubing, and the new adapter connects 1/16" to 1/32" OD tubing.

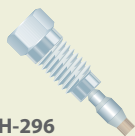
Ultra-High Pressure Fittings and Connectors



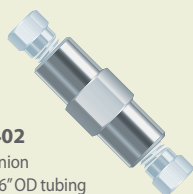
VHP-200
UHP 10-32
Stainless Steel Nut and Ferrule
for 1/16" OD tubing



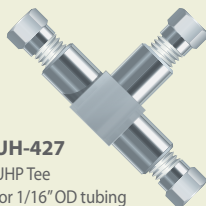
VHP-300
UHP 10-32
Stainless Steel Nut
with PEEK ferrule
for 1/16" OD tubing



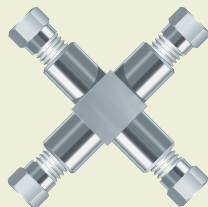
UH-296
UHP 10-32
Stainless Steel Nut
with UH-293
for 1/32" OD tubing



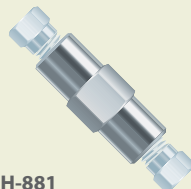
UH-402
UHP Union
for 1/16" OD tubing
with fittings included



UH-427
UHP Tee
for 1/16" OD tubing
with fittings included



UH-429
UHP Cross
for 1/16" OD tubing
with fittings included



UH-881
UHP Adapter
for 1/16" and 1/32" tubing
with fittings included

Parts shown are actual size.

Warning: At such high pressures, it is very important to ensure any fitting is tightened sufficiently to prevent possible connection failure. Please contact IDEX Health & Science for specific recommended tightening torque ranges for these products.

High Pressure MicroFerrules and Connectors

- ▶ Fingertight to 15,000 psi (1,034 bar) and 120 °C
- ▶ For 1/32" and 360 µm OD tubing connections

The new MicroFerrules are made from a proprietary high-performance PEEK™ polymer blend, enabling the use of capillary tubing in UHPLC environments. These MicroFerrules are incorporated into several of our UHP products, such as the MicroUnions and MicroTees. High-pressure MicroFerrules and Connectors are available for use with 1/32" and 360 µm OD tubing.

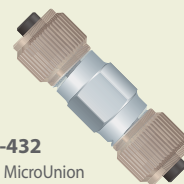
Ultra-High Performance MicroFerrules and Connectors



PK-112
UHP MicroFerrule
for 1/32" OD tubing



PK-152
UHP MicroFerrule
for 360 µm OD tubing



UH-432
UHP MicroUnion
for 1/32" OD tubing
with fittings and capsule
union included



UH-436
UHP MicroUnion
for 360 µm OD tubing
with fittings and capsule
union included



UH-700
UHP MicroTee
for 1/32" OD tubing
with fittings included



UH-750
UHP MicroTee
for 360 µm OD tubing
with fittings included

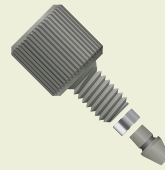
Parts shown are actual size.

Ultra-High Performance Fingertight Fittings

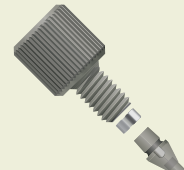
- ▶ Polymer fittings withstand up to 23,000 psi (1,585 bar), depending on the product
- ▶ Withstand temperatures up to 200 °C
- ▶ For coned and flat-bottom ports
- ▶ SealTight™, LiteTouch®, and Super Flangeless™ versions available

Upchurch Scientific ultra-high performance fittings are designed to withstand extreme temperatures and pressures. Made from a proprietary high-performance PEEK™ polymer blend, they are perfect for use within the increasingly rigorous requirements of today's advanced analytical systems. These fittings are available in popular one-piece 10-32 Fingertight style, as well as two-piece 10-32 and 1/4-28 styles, and are designed for use with 1/16" and 1/32" OD tubing.

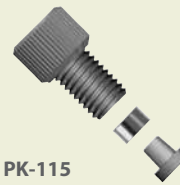
Ultra-High Performance Fingertight Fittings



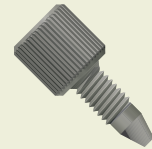
PK-110
UHP 10-32 Fitting
shown with PK-100 Ferrule
for 1/16" OD tubing



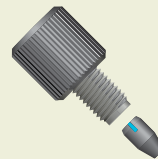
PK-110
UHP 10-32 Fitting
shown with PK-132 Ferrule
for 1/32" OD tubing



PK-115
UHP 1/4-28 Fitting
shown with PK-250 Ferrule
for 1/16" OD tubing



PK-120BLK
UHP 10-32 Fitting
for 1/16" OD tubing



PK-195
UHP 10-32 Fitting
with PK-192 Ferrule
for 1/16" OD tubing

Parts shown are actual size.

Please Note: The nuts and ferrules shown above are NOT interchangeable; they can only be used in the combinations that are shown on this page. Please contact IDEX Health & Science for more information.

The optimum tightening torque range for these fittings is 7.5 - 8.5 in-lbs. This represents a torque greater than can be achieved through finger tightening only. IDEX Health & Science recommends using the P-291 Extender Tool, along with the torque wrench of your choice, to ensure proper tightening.

Specifications and Ordering Information

Ultra-High Performance MicroFerrules and Connectors

PK-112	MicroFerrule for 1/32" OD Tubing, Black, PEEK ¹			
PK-152	MicroFerrule for 360 µm OD Tubing, Black, PEEK ¹			
		Threads	Thru-hole	Swept Volume
UH-432	MicroUnion for 1/32" OD Tubing, PEEK ² /SST. Includes (2) PK-112, (2) P-416	5/16-24	0.006"	5 nL
UH-436	MicroUnion for 360 µm OD Tubing, PEEK ² /SST. Includes (2) PK-152, (2) P-416BLK	5/16-24	0.006"	5 nL
UH-700	MicroTee for 1/32" OD Tubing, PEEK ² /SST. Includes (3) PK-112, (3) P-416	5/16-24	0.010"	84 nL
UH-750	MicroTee for 360 µm OD Tubing, PEEK ² /SST. Includes (3) PK-152, (3) P-416BLK	5/16-24	0.010"	84 nL

Ultra-High Pressure Fittings and Connectors

For 1/32" OD Tubing				
UH-293x	SST Ferrule, 10-pk			
UH-296x	SST Nut, with UH-293 Ferrules, 10-32 ³ , 10-pk			
For 1/16" OD Tubing				
VHP-200x	SST Nut and Ferrule, 10-32, 10-pk			
VHP-300x	SST Nut and PEEK ¹ Ferrule, 10-32, 10-pk			
		Threads	Thru-hole	Swept Volume
UH-402	UHP Union for 1/16" OD Tubing, SST. Includes appropriate fittings	10-32	0.010"	20 nL
UH-427	UHP Tee for 1/16" OD Tubing, SST. Includes appropriate fittings	10-32	0.020"	0.57 µL
UH-429	UHP Cross for 1/16" OD Tubing, SST. Includes appropriate fittings	10-32	0.020"	0.72 µL
UH-702	MicroCross for 1/32" OD Tubing, PEEK ² /SST. Includes (4) PK-112, (4) P-416.	5/16-24	0.010"	101 nL
UH-752	MicroCross for 360 µm OD Tubing, PEEK ² /SST. Includes (4) PK-152, (4) P-416BLK.	5/16-24	0.010"	101 nL
UH-881	UHP Adapter for adapting 1/16" OD to 1/32" OD Tubing, SST. Includes appropriate fittings	10-32	0.010"	20 nL

SST = stainless steel

1. Proprietary high performance PEEK polymer blend.

2. PK-112, PK-152 are made of proprietary high performance PEEK polymer blend; P-416, P-416BLK are made of PEEK.

3. Comes with a PEEK tubing sleeve for 1/32" OD tubing.

*Tested with water at room temperature

Ultra-High Performance Fittings

For 1/32" OD Tubing

PK-110x	PEEK ¹ Nut, Black, 10-32, 10-pk
PK-132x	PEEK ¹ Ferrule, Black, 10-pk
For 1/16" OD Tubing	
PK-100x	PEEK ¹ Ferrule, Black, 10-pk (for use with PK-110 fitting)
PK-110x	PEEK ¹ Nut, Black, 10-32, 10-pk
PK-115x	PEEK ¹ Nut, Black, 1/4-28, 10-pk
PK-120BLKx	PEEK ¹ Nut, Black, 10-32, 10-pk
PK-192x	PEEK ¹ Ferrule, Black, 10-pk (for use with PK-195 fitting)
PK-195x	PEEK ¹ Nut, Black, with PK-192 Ferrule, 10-32, 10-pk
PK-250x	PEEK ¹ Ferrule, Black, 10-pk (for use with PK-115 fitting)

Ultra-High Performance Line Pressure Ratings* psi (bar)

Product	Material	Pressure Rating
PK-110/PK-100	PEEK ¹	19,000 (1,310)
PK-110/PK-132	PEEK ¹	23,000 (1,585)
PK-115/PK-250	PEEK ¹	12,000 (827)
PK-120BLK	PEEK ¹	12,000 (827)
PK-112	PEEK ¹	15,000 (1,034)
PK-152	PEEK ¹	15,000 (1,034)
PK-195	PEEK ¹	12,000 (827)
UH-296	Stainless Steel	28,800 (1,930)
UH-402	Stainless Steel	28,800 (1,930)
UH-427	Stainless Steel	28,800 (1,930)
UH-429	Stainless Steel	28,800 (1,930)
UH-432	PEEK ² & Stainless Steel	15,000 (1,034)
UH-436	PEEK ² & Stainless Steel	15,000 (1,034)
UH-700	PEEK ² & Stainless Steel	15,000 (1,034)
UH-702	PEEK ² & Stainless Steel	15,000 (1,034)
UH-750	PEEK ² & Stainless Steel	15,000 (1,034)
UH-752	PEEK ² & Stainless Steel	15,000 (1,034)
UH-881	Stainless Steel	28,800 (1,930)
VHP-200	Stainless Steel	30,000 (2,068)
VHP-300	PEEK ¹ & Stainless Steel	20,000 (1,380)

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U6/IDX1038/02.10

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